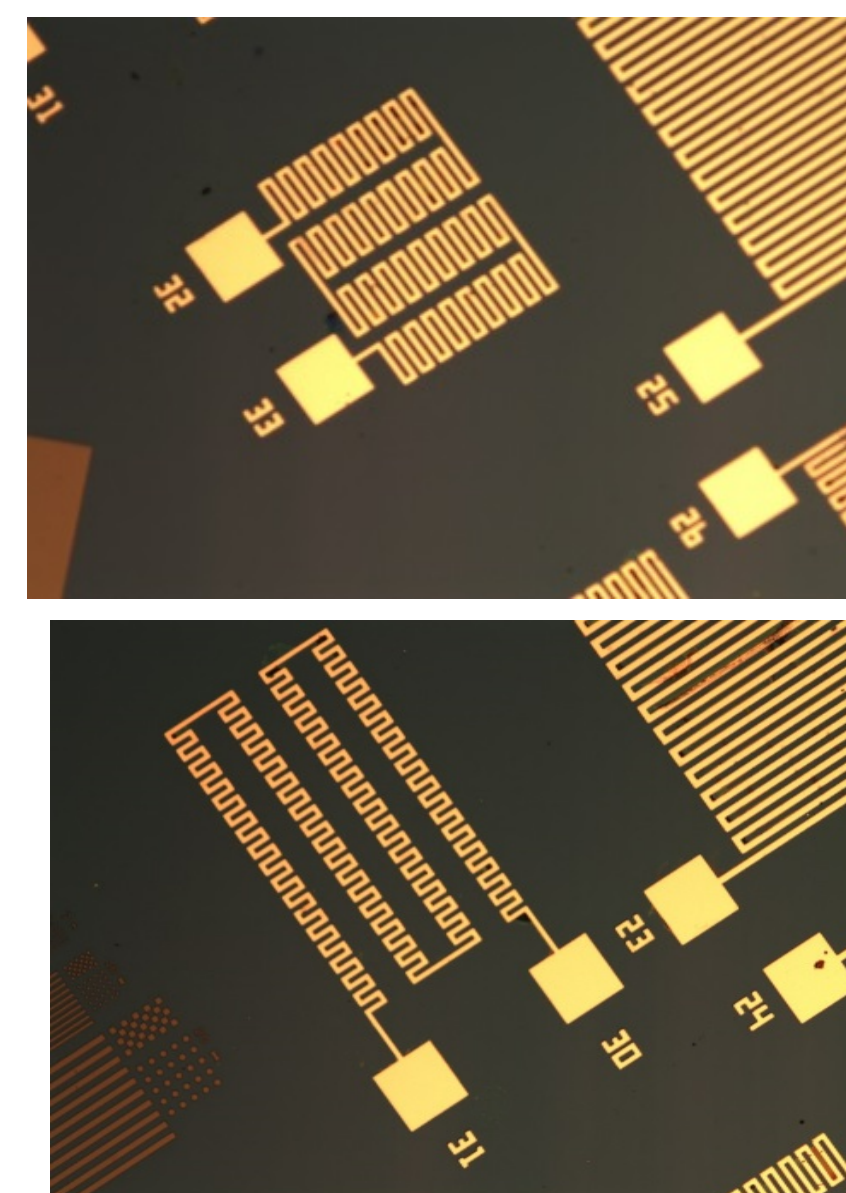
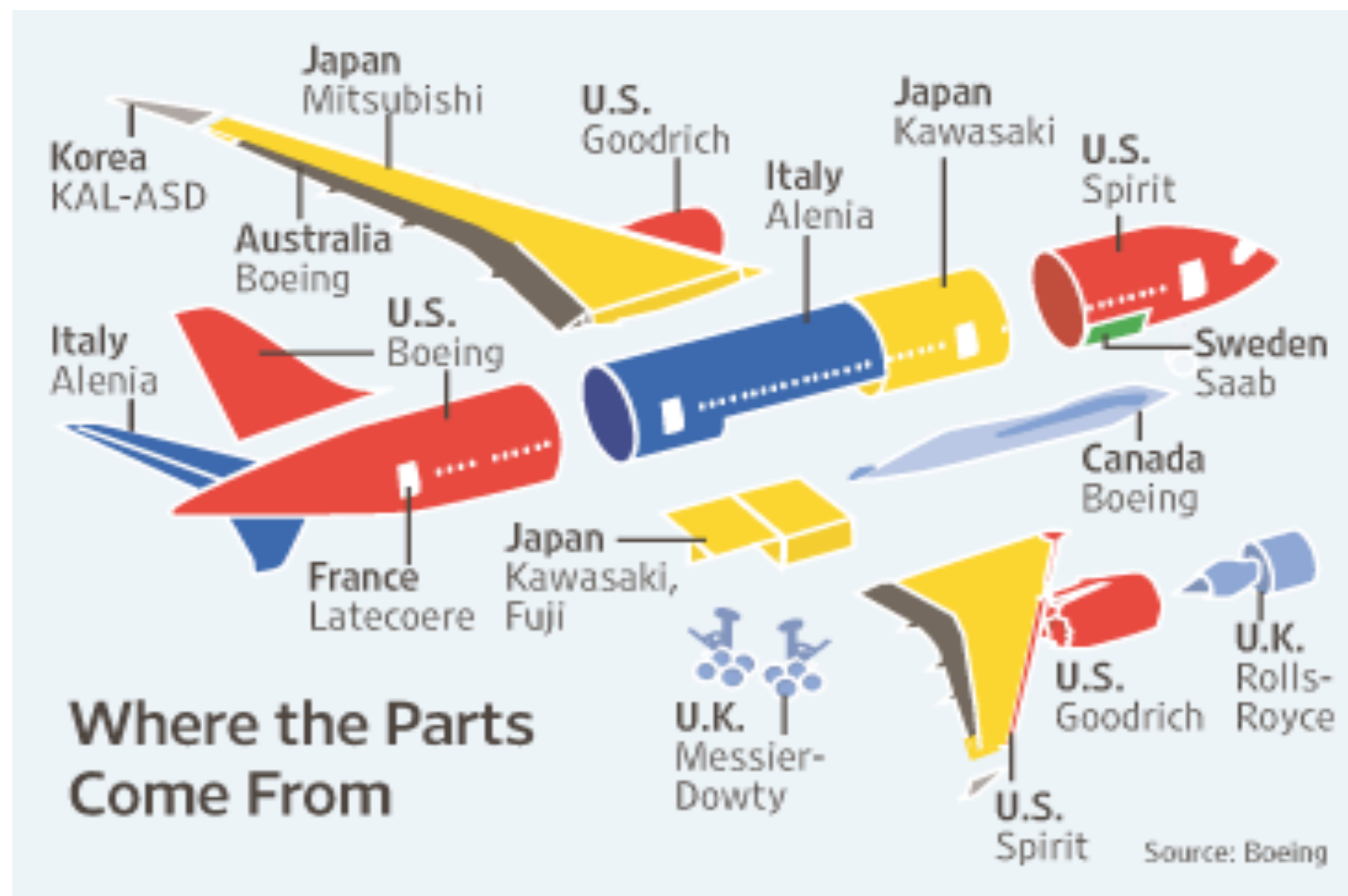


Securing Global Supply Chain with nanophotonic Hardware Security solutions

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Resistor	Fitted line value	Measured Value	Deviation
30-31	179.415	178.9428	.26%
32-33	178.788	179.1105	.18%
34-35	218.6987	217.0317	.76%
36-37	193.980	193.264	.36%

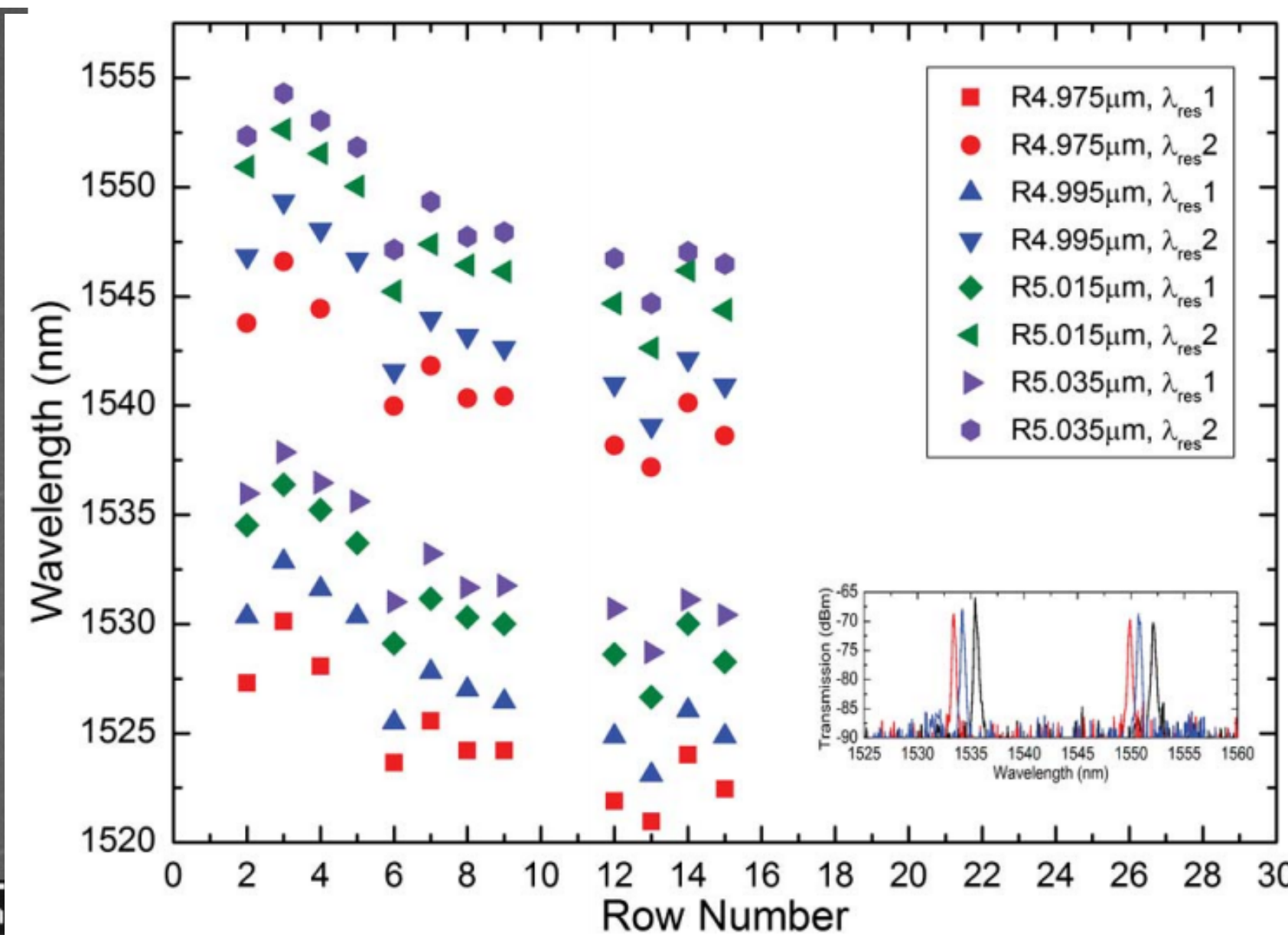
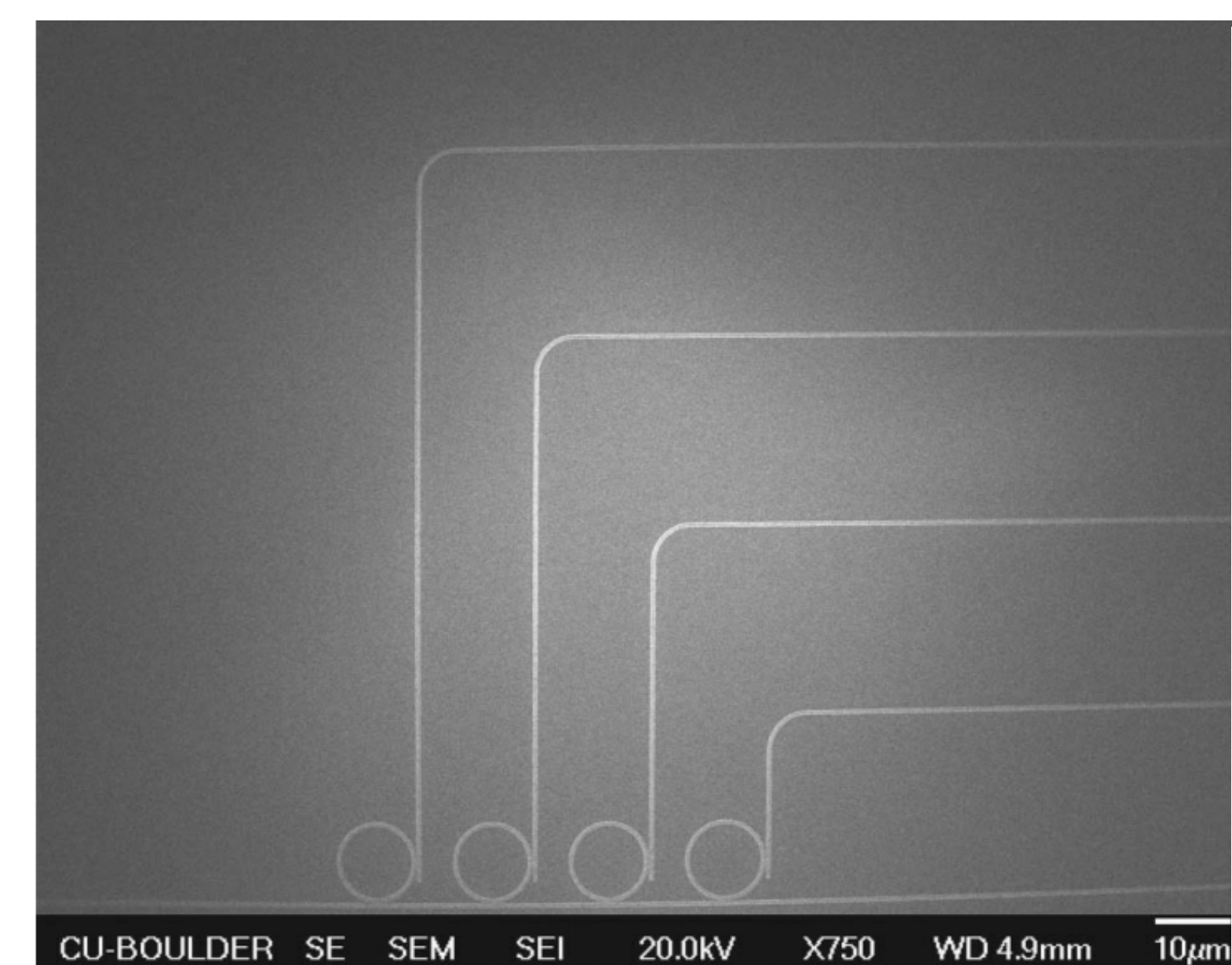
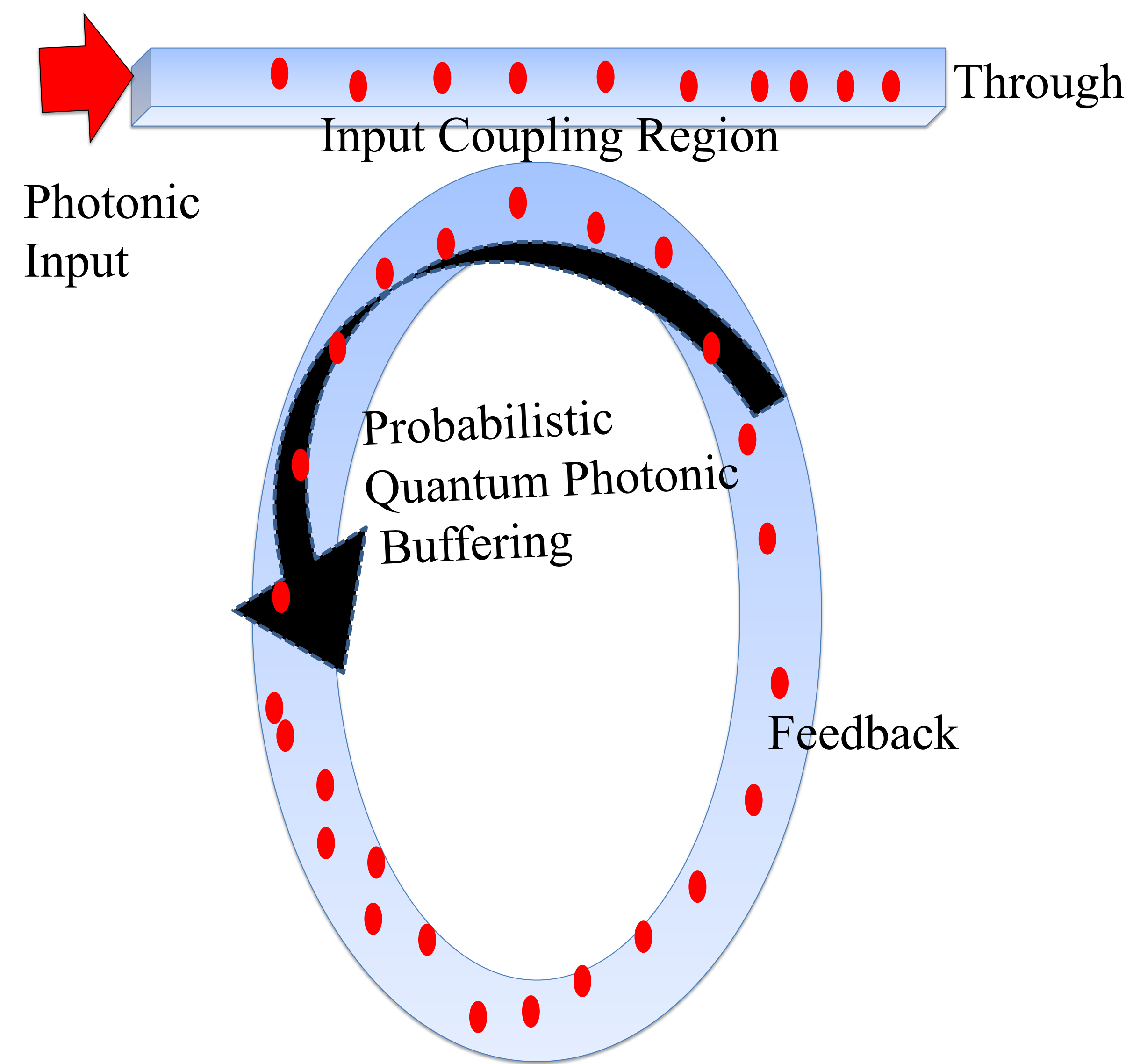
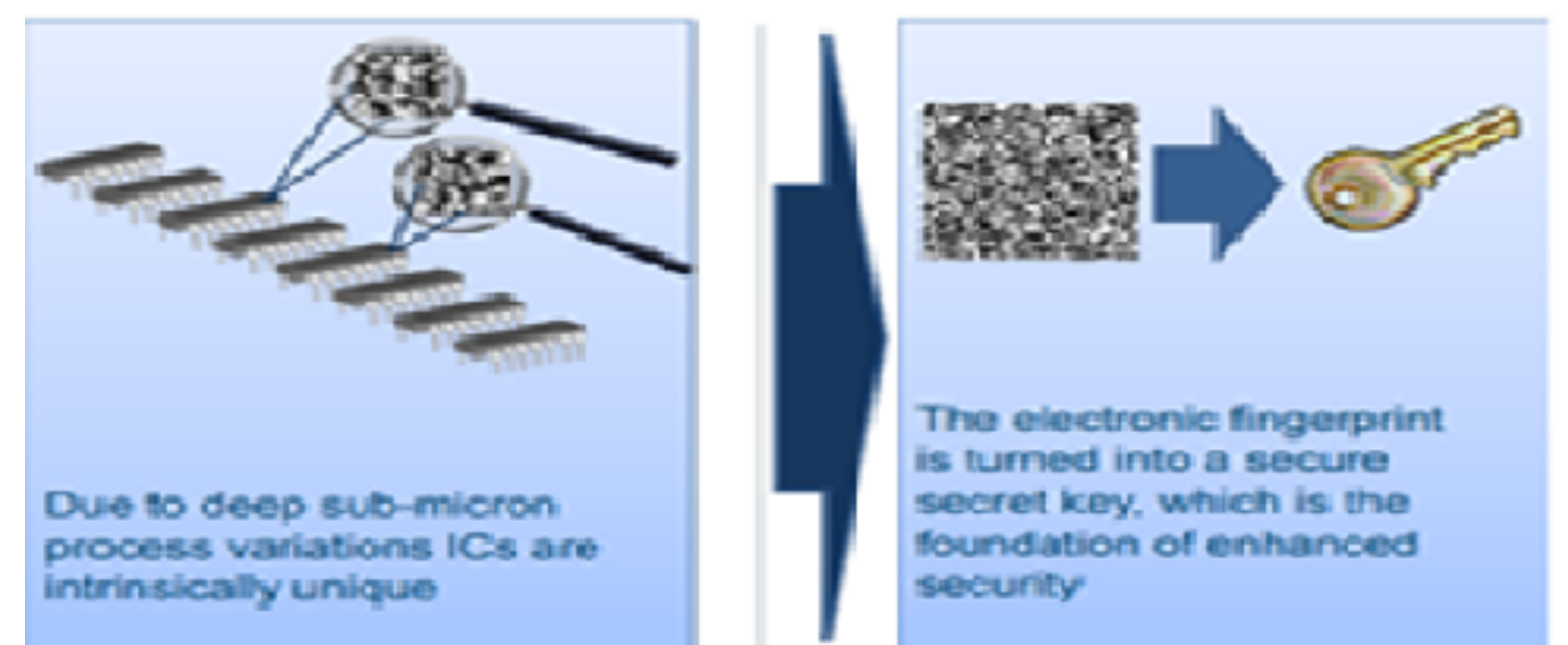
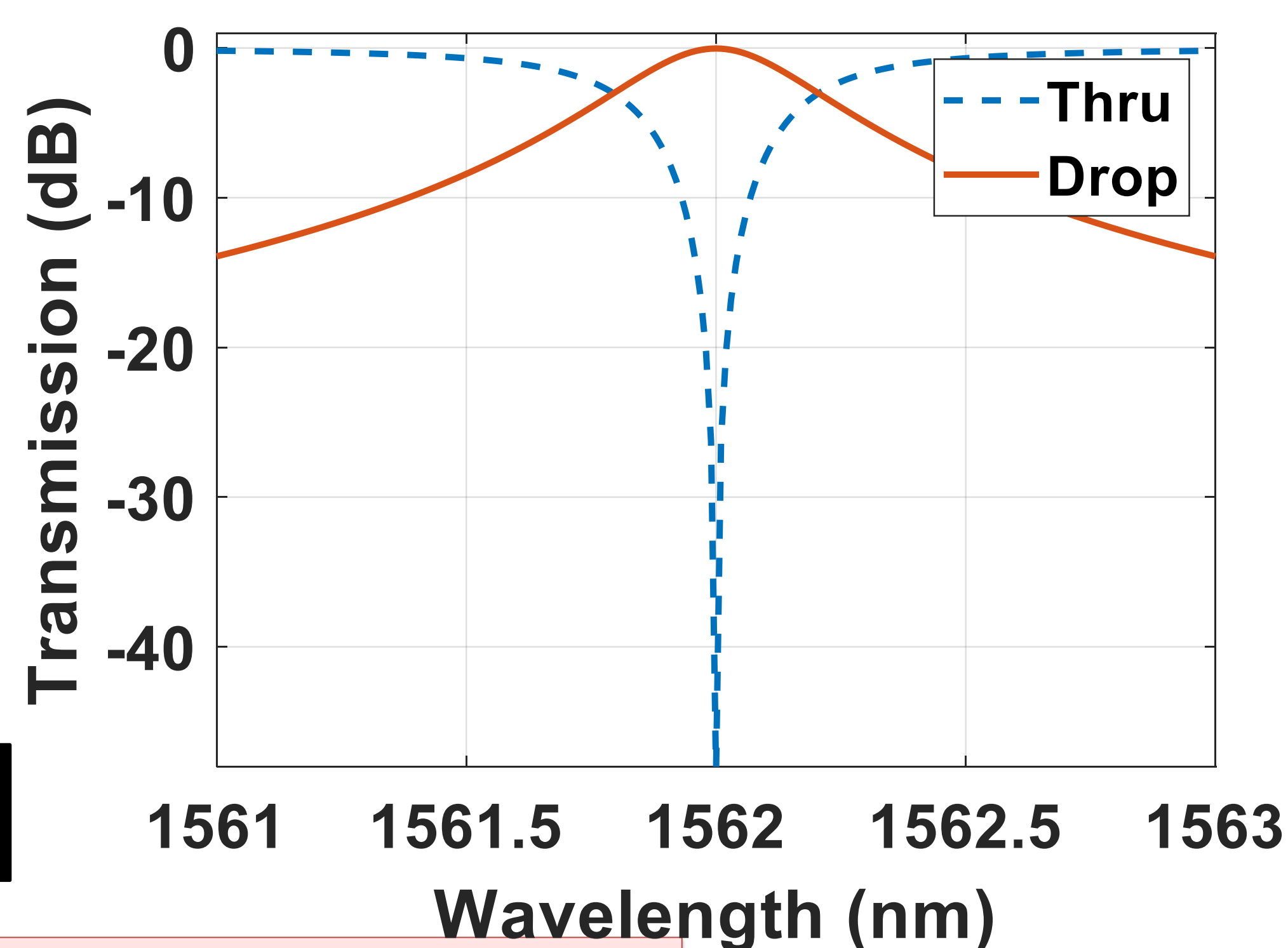
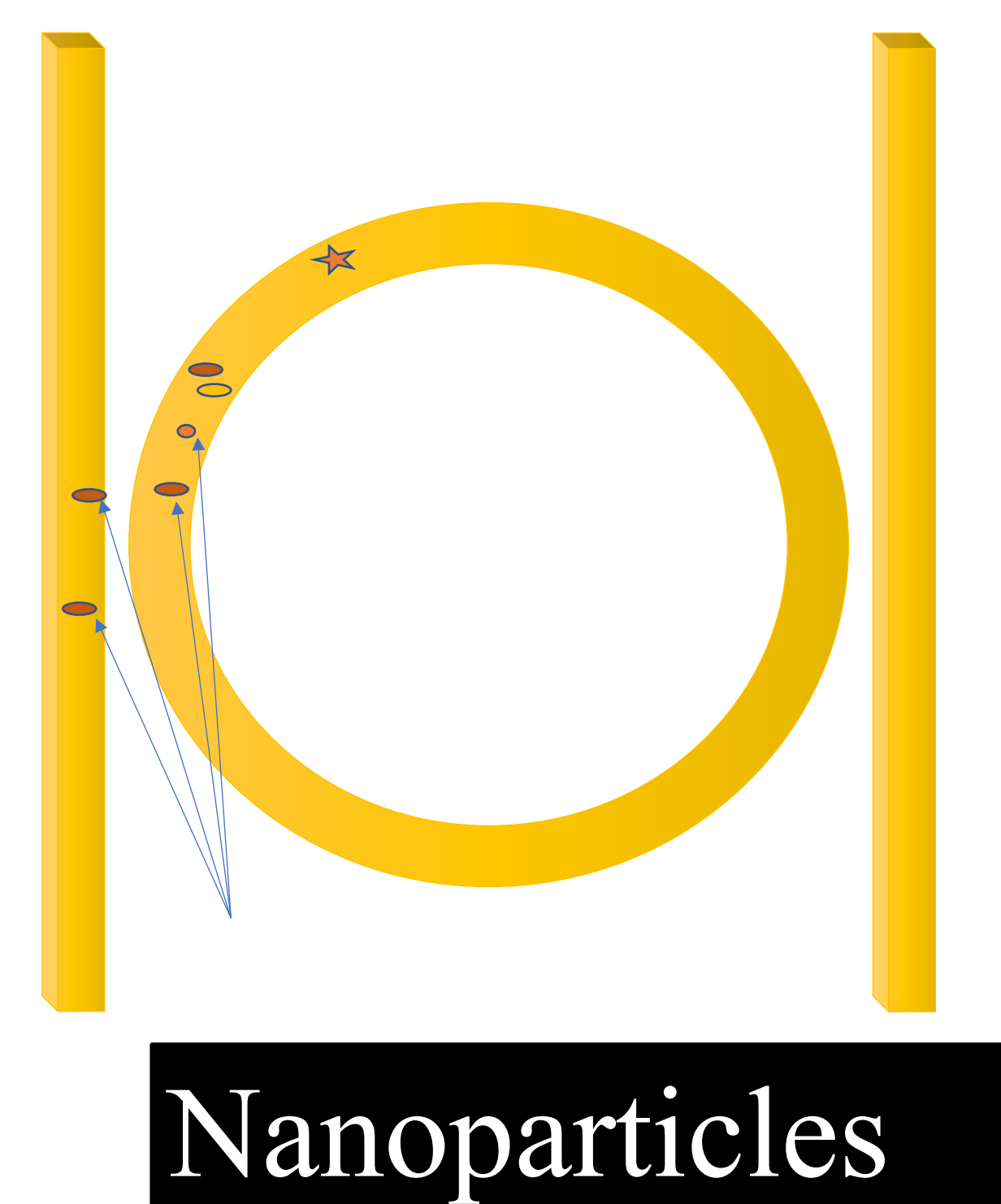
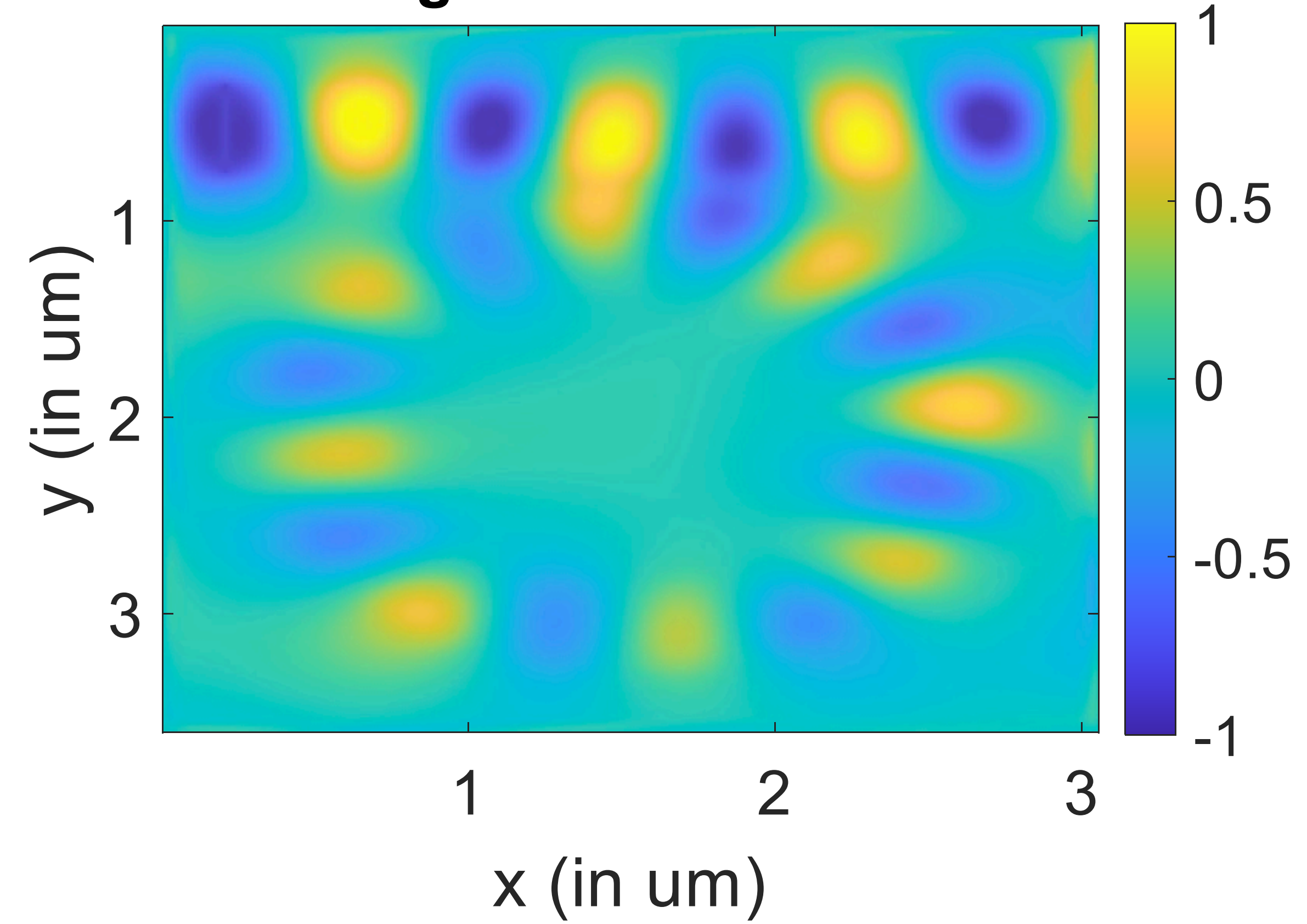


Fig. 7. SEM image of a WDM that consists of four microring resonators with 200 nm gaps and 450 nm waveguides. From left to right, the radii of the microrings are 4.975, 4.995, 5.015, and 5.035 μm, respectively. Fig. 8. Scatter plot containing two of the maximum transmission wavelengths of each of the four transmission functions of the WDM device of Fig. 7 realized on 12 dies of a 28-die column

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Plot of Ez in ring resonator with PML boundary



Key Factors to consider for source of randomness

- Bus to Ring coupling
- Ring propagation loss
- Resonant wavelength
- Output port to Ring coupling
- Mode order
- Effective Refractive Index